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PRODUCTIVE QUALITIES OF FOWLS

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The American Standard of Perfection divides fowls into some 38 breeds and 104 varieties.

What is the Standard of Perfection? The Standard of Perfection is a book of 300 pages and contains a description of all the so-called breeds and varieties. Your chicken is not pure-bred unless it fulfills the requirements laid down for one of these breeds or varieties. The Standard says that the pure-bred fowl must be able to produce more than fifty per cent of the specimens true to type and characteristics. But one male and one female must be exhibited at three annual meetings of the Association "in order that the members of the Association may inspect the same and determine upon the thoroughbred character of the fowl." Further, a new breed must possess "new breed characteristics."

Another question. Who constitutes the American Poultry Association? Anyone who pays an annual fee of $2.00 or a life fee of $10.00 may become a member on receiving a majority vote of the executive committee. This Association holds annual meetings, discusses matters pertaining to pure-bred poultry, and considers the admission of new breeds.

Another standard of authority, not a perfect standard, however, says there is only one breed. A chicken is just a chicken according to this authority. And yet we have, according to the Standard of Perfection, 104 different kinds of pure-bred chickens. This does not mean, of course, that there are 104 different kinds of eggs or an equal number or variety of fried or roast chickens.

Wherein is the wisdom or necessity for this multiplication of breeds? Let us consider this point a little. The main require-

ment, practically the only requirement, for admission to the Standard is that the specimen exhibit "new breed characteristics." The Standard says that the candidate for admission to the Standard must be able to produce offspring over fifty per cent of which must be true to type and characteristics. But this cannot be taken very seriously, for who is to count all the chicks that are hatched, and judge whether fifty per cent of them are true to type?

The main requirement is that a new breed to be admitted to the Standard must possess new breed characteristics. There must, therefore, be 104 different breed characteristics among our pure-bred chickens. What are those characteristics?

There are differences in shape. We have breeds with long body, such as the Plymouth Rocks and the Javas; and we have the short-bodied Wyandottes. Long and short body may be breed characteristics, but there are no two breeds whose only difference is in shape of body. There are differences in weight. We have the Light Brahma of twelve pounds and the three-pound Leghorn, but there are no two breeds whose only difference is a difference in weight. Weight aud shape, therefore, do not constitute "breed characteristics" as interpreted by the American Poultry Association when admitting specimens to the Standard. A difference in shape or size will not entitle them to a place in the Standard, for the very good and sufficient reason that we have them now in all shapes and sizes.

Then, how can we have our chickens admitted as a new breed? Can we go to the Association and say, "I have a flock of fowls that for ten years has produced each year an average of 150 eggs per pullet," and get any consideration? No. Why? Because the makers of the Standard have never bothered about an egg yield or egg records, and because every member of the Association would say that his own particular breed would lay more eggs than any other; therefore, it does not possess "new breed characteristics." The Plymouth Rock man would say his breed produced 160 eggs per fowl a year; the Wyandotte man would say 170, another would say 180; another 190; another 200, and so on up. The man who would go to the American Poultry Association and say "I have a strain of fowls with a ten-year record of 150 eggs a year and I want them admitted as a new breed, would be laughed out of court. Why? Because high or low egg laying is not a breed characteristic as interpreted by the American Poultry Association.

What then is a breed characteristic? Shall I say it? I pretty near said it. I remember in my youth—my younger youth—an old farm neighbor in the East who was never known to say a swear word. He was plowing with a team of horses. He called one of them Sal. As he went along, the plow, suddenly and without warning, struck a stone and his ribs at the same time. He looked as though Sal was responsible for the jolt. As he recovered his temper and power of speech he said, "Sal, I pretty near said it." When we encounter the Standard of Perfection we need the self control of my old friend or we are liable to say something. But I believe I can speak my mind freely here on this point. I believe in Iowa, which produces about $30,000,000 worth of eggs and poultry meat per year we can speak our minds on this point without danger of being mobbed.

What is a breed characteristic within the meaning of the Standard of Perfection? I am going to say it. It is feathers. It simmers down to a question of feathers. How many breeds or varieties of chickens could we have without a color test? There are some other minor differences but every breed must have its distinctive color. It is not a question of plumage color altogether; it is often a question of individual feather color. The fowl may have its plumage color right but if it has an individual feather of a different color, within the meaning of the Standard, it is not pure-bred. It would be disqualified or thrown out of the show room. It does not even stop at a whole feather; a piece of a feather or a small section of a feather with the wrong color will disqualify the bird. Another point: it is not always visible color, but if you will dig down to the roots of the feathers you may find a spot of color that will disqualify the bird. Positive black spots for instance, in the web of feathers on back of the Light Brahma disqualify. A little black spot hidden away among the feathers of the chicken that is black and white condemns it. It is not pure-bred. The Standard says "positive black spots prevalent in web of feathers of back" disqualify a Light Brahma. A feather of even microscopical size on the leg disqualifies. The absence of feathers on the leg of other breeds disqualifies. The color of the eye is very important from the standpoint of the Standard of Perfection. White in the face of certain breeds is an everlasting disgrace to the chicken that has it as well as to the man who owns the chicken. Red in the face of certain chickens debars them from polite society though they never

drink; while in other breeds the bird carrying a red face is admitted to the society of standard-bred fowls. White spots in a black chicken or black spots in a white chicken will not be tolerated. Legs must be yellow in one breed, white in another, and dark in another, otherwise they are not pure breeds within the meaning of the "Standard." In some breeds yellow skin disqualifies; in others a white skin indicates its standing.

In some breeds, to judge of their purity, you must turn up the feet and if you find yellow color on the bottom of the foot you must cast the bird aside as a mongrel. Bare middle toes in another breed (Cochins) disqualifies. Legs in some breeds must be yellow, in others pinkish white, in others blue or leaden blue, others slaty blue, in others white, in others reddish horn with a line red pigment showing down the sides.

These are only a few of the disqualifying points, points that throw the bird out of the show room. Such fowls are not pure-bred within the meaning of the Standard of Perfection. There are a great many other disqualifying points of like nature.

Now, there are disqualifying points; and there are defects.

There are a great many things called "defects," which don't disqualify but which the Standard places more or less importance upon. The Standard enumerates some 50 defects, which the poultry judge must cut anywhere from one-half to three points.

I will not impose on your time or patience to enumerate those defects. But I want to emphasise this fact that the poultry breeder, if he wishes to breed pure-bred poultry, must take account of a great many points or characteristics. That makes it extremely difficult for a breeder who faithfully follows the Standard to make satisfactory progress.

What do all those disqualifying points and all those defects mean? What do they indicate? What object has the poultry breeder anyway in following the Standard? Why does he want to breed pure-bred poultry?

If he breeds poultry for the show he must follow the Standard, because practically all poultry shows are governed by the Standard. If he breeds for eggs and meat what value have all those disqualifying points and defects for him? What value have feathers and feather coloring for egg production and meat production? Does a certain feather or color indicate anything of the fowl's egg-producing capacity? Does a red face or a white face, a yellow leg or a pink leg, a rose comb or a single comb, feathers on the legs or

no feathers, five points or six points on the comb—do all these and a multitude of other points have any bearing upon the question of production?

Now I think you are ready for the swear word. I am going to say it. It is this: The Standard of Perfection gives absolutely no clew as to where you will find egg-producing points. Again, the Standard of Perfection gives absolutely no encouragement or help to the man who is breeding for egg production.

None of the points I have mentioned as disqualifying the fowl are based upon any consideration of egg production. If a black feather in a white hen indicated a good layer, I would disqualify the white hen without the black feather. That would be encouraging improvement in egg production, but in the multitude of points that are enumerated in the Standard, there is no indication that they have been placed there as a result of an investigation of egg-producing traits or characteristics. That is one swear word. Here is another:

The Standard of Perfection tells us that we have 104 different breeds and varieties of pure-bred chickens; but so far as egg-production is concerned there is no pure-bred chicken. In other words, they are all mongrels so far as egg production is concerned. So far as egg production is concerned we have only one breed of chickens or no breed. They may be pure-bred so far as feather color and shape are concerned. The different breeds have an ancestry along these lines. Their offspring show fifty per cent of those characters inherited from their parents; at any rate in admitting a new breed to the Standard the Poultry Association guarantees that fifty per cent of the offspring have the characteristics of their parents.

But nothing is said of egg yield. Nothing is even said of external characters indicating good egg yield. The Standard is consistent, however—it doesn't vouch for the egg-producing qualities of any breed.

I need not tell you here of the great variation in layers of different breeds. The trapnest has enlightened us on this point. In fact I believe that the trapnest is the greatest enlightener that we have. To the practical poultryman it has made the Standard of Perfection look like thirty cents. It has shown us that the hen may fill every requirement of the Standard and win the first prize at the show, and yet be a miserable layer. It has opened our eyes. We don't need to look for the high producers among the prize-

winners any more than we do among the poor despised, disqualified specimens of the same breed.

The trapnest has found, as you know, good looking hens and poor looking hens lay more than 200 eggs a year. It has also found good lookers and poor lookers lay less than a dozen. It has pointed out a clear line of distinction between so-called standard-bred poultry and practical poultry. It has opened up a new field in poultry culture. But we will discuss the trapnest later.

I want now to quote a sentence from Eugene Davenport's book—"The Principles of Breeding." It is this: "Difficulties in selection increase rapidly with the number of points on which selection is to be based." Let us paste that in our hats.

We have already seen that in breeding to meet the requirements of the Standard of Perfection we have to breed for a great many points. Suppose we are breeding Barred Plymouth Rocks to meet Standard requirements. We want good barring, good size, good color of ear-lobes, good shape, good comb, good color of legs and beak; here are eight points we want to breed for, not to mention a dozen or more other points. Now, suppose you raise 100 barred Rock pullets every year. If you have a good strain you may get say 20 out of a hundred that have good size. You select the twenty for breeding and market 80 for eating. But you want to get good barring as well as size. Say, ten out of a hundred have good enough barring to win prizes. But out of the hundred only 20 had proper size and you have only 20 from which to select those that have the proper barring. You are as liable to get good barring from the small birds as those having the proper size. So that you can figure only on getting the same percentage of good barring out of the 20, as you would out of the 100. Now if you get 10 out of a hundred with good barring, how many would you get out of 20? That's a mathematical proposition. You would get just two. That is the probability.

When you are breeding for one point—size—you get 20 out of a 100 for breeding, but when you mix it up, when you breed for two points instead of one, you get only two birds for breeding purposes.

But there were eight points, or more, that you started in to breed for. One other point was good color of legs; you want to breed for that also. Suppose you get 20 out of 100 that have good leg color; that is 20 per cent. But you have only two left to select from. If you get 20 out of 100, how many would you get out of two? You

would get a fraction of one bird. You would get, mathematically, four-tenths of a bird to breed from.

That is, out of a hundred chickens to select from, and you wished to breed according to the Standard of Perfection for only three points of the eight mentioned, you would get less than one bird that possessed those points in the perfection demanded for the show bird. If you object to the percentages I have used; if you can get more birds out of a hundred having the size, barring and leg color in the perfection necessary to win in the show room, double up on the percentages and see where you will come out. It would be largely a game of chance whether in ten years you would be any nearer the goal.

So that, as we increase the number of points that we wish to breed for, the slower progress we will make in breed improvement.

I said that we need not look for the prize winners among the high producers with the expectation of finding them rather than among the low producers. Last year at the Oregon Station our highest producer was a Plymouth Rock with a wry tail. Now, if we were to follow the Standard in our breeding we would discard that hen as a breeder, because a wry tail is a disqualification. Would you do it? Here is a 200-egg hen with a tail carried at a wrong angle, possibly the only 200-egg hen in the yard; would you chop her head off? If you wanted to combine fancy points with practical points—if you wanted to breed true to Standard requirements; you would have to discard that hen. I once had a Wyandotte that laid 216 eggs in a year; but she had a disqualification; she had no spike on her comb. The Standard of Perfection would say that hen is only fit for the pot; you mustn't breed from her!

Would a horse be barred from winning the Derby because he carried his tail to one side? Would Lou Dillon be much less a trotter if she had two white feet instead of one? Would Arion, the highest priced American trotter, have brought a dollar less than $150,000 if he had one white foot instead of two? Would Dan Patch be anything else than Dan Patch if he had a few white hairs on one of his four feet? A trotter is a trotter in any color, if he can go. A trotter to be registered in the American Trotting Register must have speed and an ancestry of speed. That is the only requirement. The only "disqualification" is lack of speed. He may be of any color or any size if he has speed. It is speed alone that counts.

I believe there is no "color test" in cattle, unless it be in the Dutch Belted, which are required to have a "belt" around the middle. Dr. Davenport speaks of this requirement in these words: "This will keep the breed materially behind its competitors in matters for which we breed cows." Further he says: "No language is too strong in condemnation for such a step."

To encourage the poultry industry hundreds of poultry shows are held each year and thousands of dollars are paid for premiums, and the premiums are awarded on the basis of the American Standard of Perfection. We are encouraging the Poultry industry—we think we are—by paying premiums for feathers and other fancy points and for shape of body, and farmers go to the shows to purchase their breeding stock. They never suspect that the premiums indicate nothing of the egg-laying qualities of the fowls.

Another thing that may be mentioned in this connection. The American Poultry Association—the publishers of the American Standard of Perfection, are now licensing institute lecturers, who as they go about the country tell the farmers to buy pure-bred, standard-bred poultry, because they are the best layers. What do they know about that?

As bearing on this point, I wish to quote here a few sentences from a recent article by a German writer and experimenter (Zeitschrift Landwirtschaftskammer Schlesien, 13, No. 93, pp. 1169-1173) as follows:

"It can probably be laid down as a maximum that poorer laying hens have a prouder or fuller form of figure than the better laying hens. I remember that I saw in a German poultry journal a reproduction of two hens which had laid per year 170 eggs. The editor added the remark that they were forms that would appeal to us. I admit this. They were not fowls that would please the breeder for sport (fancier), but the better did they please the breeder for usefulness. It is tolerably sure that he who would send his best laying hens to poultry shows would have poor luck in obtaining prizes. In our garden side by side stands two cherry trees. One grows splendidly and luxuriously in spite of the poor soil. The other looks like a crippled tree. Nevertheless, the latter is the one that gives us the most pleasure, for while the former luxuriously growing tree produces a very small cherry, the second rejoices our heart at Whitsuntide every year with an abundance of the most beautiful cherries. It is similar with hens. The poorly laying

hens, just because they don't lay, thrive, and the well laying ones use up their strength by the deposition of eggs and are therefore for the prize judge at exhibitions no special mark and don't incite his pleasure. But for the agriculturist such layers are exactly that kind of a hen that he needs for his yard and which gives him his profit."

Further on the same author says: "In my opinion, it is a matter of course that we have to ignore entirely the so-called standard—that is to say, the marks of different breeds which at present obtain gold and silver medals where the only thing to be determined is the comb, the ear-lobe, the legs, toes, plumage, as these do not affect the point in question. All these are marks of beauty. At the present, in giving premiums it is entirely immaterial whether the hen lays two or twenty (dozen) eggs a year. The main thing is that all the so-called beauty marks are present and without fault. But this does not lead us to the goal. Everywhere else one is accustomed to observe nature, to recognize thereby the existence of things and derive therefrom suitable laws. The raising of poultry seems to be done under reverse principles. The marks are laid down by men smoking a cigar and drinking a glass of beer and say this is the standard. Such and such a way the hen has to look. Breeder, take notice, otherwise you will receive no premium. Whether the hen is profitable is immaterial. That is not an outward sign, and that is what tells here. It is probably clear to every breeder that he will never succeed in this way. We should start on a different road. According to my opinion we should have poultry breeders who breed for profit. If then they obtain hens that would lay on an average of 150 to 160 eggs per year, one should look for outward marks by which the best layers might be recognized. It seems to me that gradually one might be able to solve the problem. To try to determine the type by the hens which don't lay seems absurd." So much for a German view.

The breeding of fancy poultry is a fascinating pursuit to many and poultry shows interest thousands. The great variety of color and shape and size is an instructive object lesson of the breeder's art. Men who have possibly never heard of the master painters have painted the hen in all conceivable colors. Men who have never been inside of a foundry and witnessed the operation of pattern-making have molded the hen at will. Some breeders are so extremely devoted to the nude in art that they won't tolerate a

feather or a piece of a feather or a little down on the legs of their fowls, and have banished all such coverings by the breeder's art. Others with becoming modesty have clothed the legs with feather trousers.

All that is true. All that represents years of patient endeavor. That may be legitimate work; that may be encouraging the poultry industry; but it is hard to see it that way.

Poultry breeders have been telling us for many years that the pure-bred poultry are the best layers, and this is echoed and re-echoed every day in the year by the poultry papers and the farm papers, and most of us have come to believe it. But has anyone ever been able to demonstrate by careful experimentation or test that the pure-breds are better layers than the cross-breds or the ordinary barnyard fowls? If the breeders had always believed that way; if they had always advocated pure-breds and acted that way, we would have had no Plymouth Rocks or Wyandottes or Orpingtons, or various other breeds. We would have had none of the most popular breeds today. Why? Because they are all the product of crossing. They are not distinct breeds in themselves.

Mr. Wm. Cook, the originator of the Orpingtons, makes this confession as an excuse for bringing out the Orpingtons—First, the old varieties of England were inbred too much, and therefore their egg-laying organs were weak. Second, very few good birds of any breed were kept. Third, that by crossing he produced so many more eggs than he did when the breeds were pure. Fourth, no variety at that time was considered by him good winter layers and table birds combined.

Most of our other breeds have probably originated for similar reasons. At any rate we should not forget the fact that our American breeds are the product of crossing, if they cannot be classed as crosses. It is hardly consistent for a breeder to cross several breeds to make a new breed or variety, and then tell us of the dire results that follow from crossing. Poultry-keepers and poultry writers should look the facts in the face.

But we are concerned chiefly with the table qualities of poultry and with their egg-laying qualities. My subject is farm poultry, not fancy or standard-bred poultry. We are apt to tell the farmers every day that he knows nothing about poultry; that he ought to study up. We tell him about this system, and that system, and special poultry farms, and tell him to go and do likewise. But he

goes on in his own ignorance and produces $600,000,000 worth of poultry and eggs a year while a certain Egg Farm produces $6,000 and a certain "system" produces $1,500 in one year on a vacant lot.

The best poultry-keeper in the country is the farmer or the farmer's wife. I have been ashamed a hundred times in my chicken career that we who were "educating the farmers" were raising sickly, constitutionally weak chickens, and then to go on to a farm and see running around the barnyard, without apparent attention or care, thrifty, robust, lively, constitutional vitality chickens. The farmer is the best poultryman in the country. We are the slaves of the dogma of the feather and the Standard, and the farmer produces the eggs.

Feather is all right; pure-bred fowls are all right; but the question is, shall the farmer make feathers and fancy points of primary or secondary importance. It is no use talking to the farmer about fancy points, or about Standard of Perfection, unless we can show him that there is some connection between them and productive qualities. He is not concerned about such things. He is concerned about supplying the market with poultry and eggs.

On the other hand, markets are not concerned about the Standard of Perfection. They never heard of it. In our large markets the dealers have heard of the Plymouth Rock, but they don't know what color he is, or how many toes he has. The Plymouth Rock is so much meat to them. The past winter I called on a commission merchant in San Francisco and had a talk about market poultry. He informed me that San Francisco had to depend largely on Kansas, Nebraska and Oklahoma for market poultry. They could not get Plymouth Rocks in California, not to any extent. He wanted the Plymouth Rock and no other bird. He invited me to go down to the railroad yards and see two carloads of live Plymouth Rocks which had just come in from Nebraska, over 4,000 in a car. That was a sight I wanted to see—two carloads of Plymouth Rocks shipped into San Francisco for eating! I asked two men who were unloading a car of chickens where the two cars of Plymouth Rocks were. He said: "This is one of them; that's the other over there." "Are those Plymouth Rocks?" I asked. "Yes, and they are beauties. Them's the kind of chickens San Francisco wants." Now, on those cars there were chickens of all colors, barred feathers predominating, but it is safe to say that all the American breeds were

represented, with a sprinkling of Asiatic and Mediterranean blood. I was very much disappointed. Was that the kind of Plymouth Rocks they raise in Nebraska? But I soon got over my disappointment, and I felt glad. Here was a practical demonstration that the market made no distinction between a Plymouth Rock or a Wyandotte or Rhode Island Red and crosses between those and other breeds. Speak of standard-bred fowls or fancy points to those men and they will laugh at you. Tell them that no Plymouth Rock should have six points on the comb or a feather on the leg, and they will stare at you. They say: "Send on the poultry flesh as fast as you can. We don't care what kind of feathers it is covered with, only there must be more meat than feathers and bones."

Why should the farmer pay fancy prices for pure-bred breeding stock when the markets don't demand it? Why advise the farmers to purchase pure-bred fowls when there are not enough pure-bred Plymouth Rocks, or any other breed, in the United States to stock all the farms in one Iowa county? The farmers will make slow progress in increasing production if they must use nothing but pure-bred stock. Let us see.

Personally I believe there are other reasons why farmers should not confine themselves to pure-bred stock. No matter what breed of fowls we have, you know they must have good vitality or they will not give profitable returns. No matter what their ancestry or breeding may be, no matter what feed or care we may give them, they will not be profitable producers without constitutional vigor.

I believe this is true: The farm stock, the cross-bred stock, or shall I say the mongrel stock, have better vitality, are more fertile, are less preyed upon by diseases and produce more eggs than the average flock of pure-breds.

As to the question of vitality a great deal of the pure-bred stock are raised under conditions that do not produce high vitality. Fanciers or breeders are not very often farmers. They are more often people in towns who keep their fowls in small yards and under conditions that are more or less artificial. Farm stock is raised under conditions that are more conducive to health and vigor. Then the pure-bred stock is more often in-bred. Close breeding is practiced by many fanciers, and while inbreeding may not necessarily be injurious the chances are that it works a serious injury in the average flock and with the average breeder. Then the fancier is liable to overlook vigor in his eagerness to secure good feather-

ing. No one but a true fancier appreciates fully a perfect feather in a fowl. A fancier once told me that he could smell a finely barred Plymouth Rock a mile away. There is a charm in it that gets away with him. After he has spent ten years to produce a finely barred bird, would you wonder if he selected that bird for breeding even though he was inferior to another bird in vigor and practical qualities. The temptation is too great to sacrifice vigor for barring or other fancy points. What else can you expect when the Standard allows 40 points out of a hundred for color, and the poultry judge may, and very often does, give a much higher value than this to color. Some fanciers as well as judges are "color blind"; that is, they see nothing but color.

Now, then, in proportion as we give value to color in our breeding in that proportion are we discounting vigor and utility points. In proportion as we give value to color and fancy points we are handicapped that much in our efforts to build up the practical qualities of our fowls. If fancy or pure-bred fowls have not the constitutional vigor of the farm fowls, it is just what can be reasonably expected. You can't breed for 20 fancy points, and at the same time maintain or improve the egg-laying qualities of the flock. If you do you throw out the 200-egg hen with the wry tail and the 200-egg hen with the faulty comb.

The question of stamina and constitutional vigor has undoubtedly a great deal to do with egg yield. On the average I believe we will get a higher egg yield from the crosses than the pure-breds due to greater vigor rather than to any possible difference in egg-laying capacity. Health and vitality are more important than breed when it comes to production.

What then is the most profitable breed for the farmer—not for the special poultry farmer or fancier, but for the farmer, the man on farm where some system of mixed husbandry prevails? Shall he stick to the dunghill or shall he buy pure-breds? Before going further the word "dunghill" needs a definition. What is a dunghill? All fowls that are not standard-bred or pure-bred are usually called dunghills. But a distinction should be made; another class should be added. I will call the dunghills those that are allowed to breed indiscriminately for generations without any new blood being introduced. A great many farm flocks are better than that, the majority of them. The fowls are not closely related, not as closely related as fanciers' flocks on the average. The farmer

often buys pure-bred males, and in that way he grades up his flock and avoids inbreeding. So we have the three classes—pure-breds, grades or cross-breds, and dunghills. Both the pure-breds and the dunghills are the victims of improper selection and inbreeding. It is my opinion that the cross-breds or the grades are the most profitable fowl for the general farm. Instead of asking, therefore, what is the most profitable breed, let us ask, what is the most profitable fowl. It is not a question of breed; it is a question of type, or shape, or size and vigor largely.

The way to develop the poultry industry—one way—is to stop advocating pure-bred or standard-bred fowls for the farmer. The way for the farmer to increase his profits is to get away from the dunghill idea and to avoid fancy-bred fowls. He should decide on the type of fowl to breed and forget the names of the breeds. Let him decide, bearing in mind the conditions of his markets, whether he wants an egg type or a small fowl; a meat type, a large fowl; or a general-purpose or medium-size fowl, and then purchase pure-bred males of the proper type and of good vigor, and grade up his flock. The way for the farmer to start in the poultry business is to buy or borrow a few cross-bred fowls, or eggs from cross-bred fowls from his neighbor, and then use pure-bred males to grade up his flock. In a few years, say four or five, he will have a flock of fowls of uniform shape and size and of good vigor, and they will be uniform in color also, if that is anything.

If we want to increase poultry production and at the same time help the farmer to increase his profits, it seems to me that that is the way to begin. Forget about the Standard of Perfection. Leave that to the fanciers, and let us get after practical and immediate results. The country wants eggs and poultry, and we cannot get these by building on a foundation of feathers or fancy points. Let the foundation be of eggs and poultry meat. We can then build a superstructure with feather trimmings. If we want eggs let us first get a hen that lays, no matter what her color or shape. Let us study her external characters, and when we find that certain characters or points indicate the good layer, let us breed for those characters regardless of everything else. If we discover that the heavy layer has a certain shape or type or size or color, let us breed for those points even if it is a wry tail or a "sqirrel" tail. If it develops that she has a long body, let us make that the standard of perfection. If it develops that she has a large comb, let us breed for a

large comb. Then after we have developed an egg type and have got a sufficiently large flock we may, if we wish, give some attention to feathers; but let us adhere strictly to the egg type and breed for eggs.

This brings up the question of trapnests. To discover the egg type we have got to use the trapnest, or some other method of keeping a record of eggs laid by individual hens. I would encourage not discourage the use of the trapnest. It is about the best thing thing we have discovered in the poultry business. We will make slow improvement in breeding without an egg record for each hen in the flock. The objection to the trapnest is that it requires too much labor for the farmer. That is true. Not many farmers can give it the necessary time. I believe that the state or experiment station should come to the rescue here. I believe there ought to be a breeding station, or several breeding stations, in every state where farmers could secure at nominal prices cockerels of good egg-laying pedigree to mate with their flocks. It would not take very long to furnish every farmer with a male bird whose ancestry for two generations had an egg record of 150 eggs a year or more.

Another point: We say it is the hen of vigor that lays. We say without constitutional vitality she won't lay. That is undoubtedly true. A hen may have the egg-laying capacity, but without vigor she won't produce eggs. On the other hand, the hen may have vigor without the egg-laying capacity. She may have constitutional vitality and lay less than 20 eggs a year. The point here is that by selecting for vigor alone we won't make very rapid progress in breeding up a strain of layers. We have got to select for both vigor and egg capacity. The trapnest enables us to do this. The hen that lays 200 eggs a year has good vitality. So that a high egg record is an indication of high vitality. It is of course possible that the 200-egg hen will not produce chicks of good vigor. It is also possible that her eggs may not be very fertile. That is another question. It is possible that very heavy laying may injure her breeding qualities; that is a debateable point. But the fact remains that the hen that lays 150 eggs or more in a year has good vitality, and it is such hens that we must depend upon to increase the egg yield and make poultry-keeping more profitable. A high egg record indicates constitutional vitality—stamina. The trapnest therefore, selects for vigor as well as egg-laying capacity.

If each state would take hold of this work in earnest, I believe in

a few years it would add millions of dollars to the profits of the poultry-keeper, and at the same time help solve the problem of the nation's food supply. We have been puttering at this poultry business long enough. It is time to be doing something.